



Red Hill - Adit 6 AFFF Release Emergency Response

SITREP 6

Incident Case No.: 20221129-1438

27 February 2023



Release Details

- 29 Nov 2022 - AFFF concentrate release resulted in ~1,100 gallons being released in the Adit 6 tunnel and to the environment.
 - Ansulite AFC-3MS 3% AFFF Concentrate
- Impacted Areas:
 - Adit 6 Tunnel
 - Asphalt
 - Soil
 - Culvert, Inlet and Drainage Pipe (potentially)





Response Phases

Phase 1 - Exterior Excavation (Soil/Concrete/Asphalt)

Start: November 29, 2022

Status: Initial Excavation Complete; Geotextile Fabric & Plastic Sheeting Laid at Excavation Limit; Base Poured and Asphalted – Temporary Cap Completed (23 Dec)

Phase 2 - Sampling

Start: December 2, 2022

Status: Groundwater and Soil Sampling Plan Approved (Phase 1&2); Excavation Limit Confirmation Soil Samples & Groundwater Samples Collected; Soil Analytical Results Validated and Posted. Groundwater Analytical Results for Weeks 1-5 Validated and Posted. Weekly groundwater sampling on-going.

Phase 3 - Culvert Excavation

Start: December 12, 2022

Status: Work Plan and Sampling Plan Complete; Excavation Complete; Excavation Limit Confirmation Soil Samples Collected; Laboratory Analytical Results Received, Validated and Posted; Culvert Excavation Backfilled to Grade; Temporary Asphalt Cap (20-21 Dec)

Phase 4 - Adit 6 Cleaning

Start: January 3, 2023

Status: Cleaning and Application of Epoxy Coating Complete January 13, 2023. Access resumes January 30, 2023

Phase 5 - Site Restoration

Start: TBD

Status: Pending



Phase 1 – Exterior Excavation (Soil/Asphalt/Concrete)



Objective: Immediate Removal of AFFF Impacted Media

- Remove impacted earth outside Adit 6 to protect from rain and limit migration
- Absorbent pad deployment in tunnel to remove AFFF liquid from floor
- Decision Units (DU)
 - DU1 – Concrete drainage ditch – leading to inlet
 - DU2 – Soil between drainage ditch and asphalt apron
 - DU3 – Asphalt apron at entrance of Adit 6
 - DU4 – Storm-water outfall
- Excavation Start – November 29, 2022
- Soil Samples Collected (post excavation)
 - DU1,2,&4 – December 2, 2022
 - DU3 – December 7, 2022
 - DU 5-8 (Culvert) – December 15, 2022

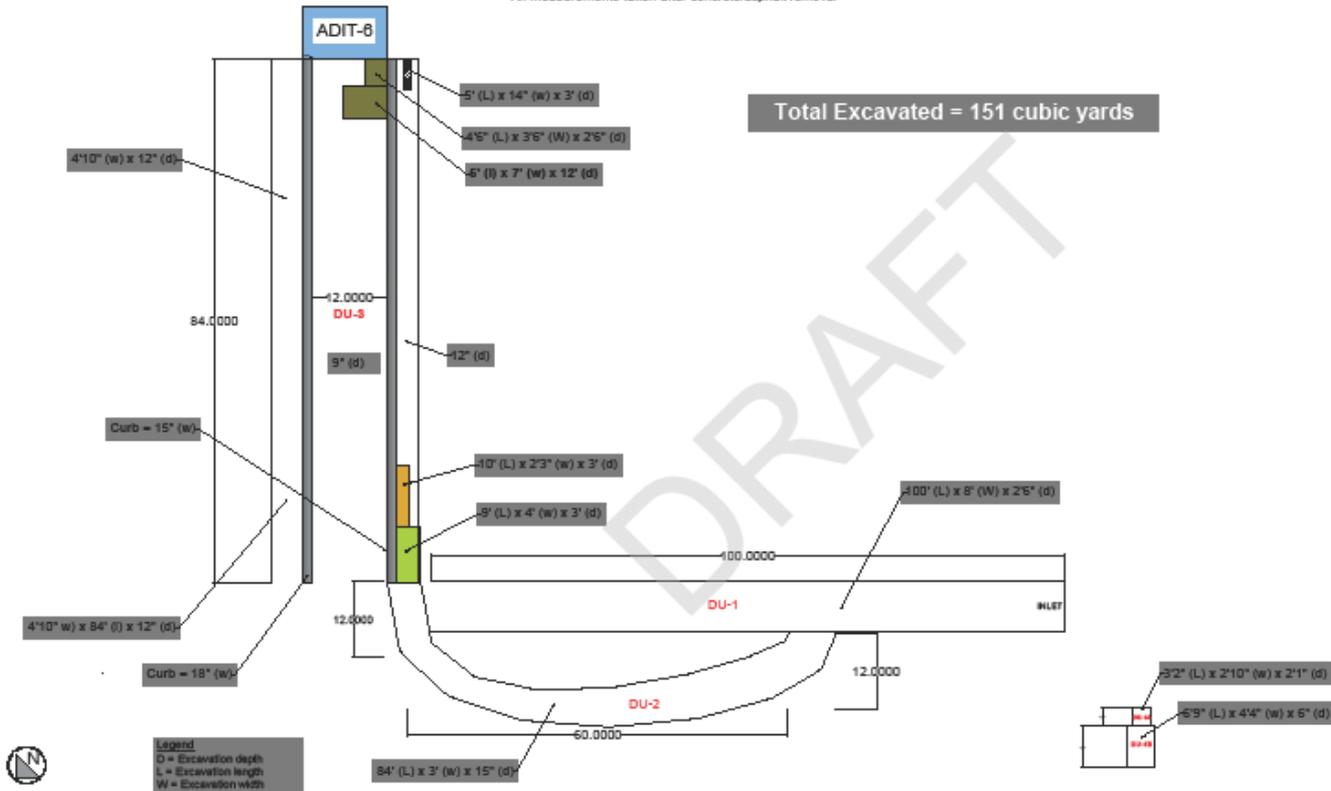




Phase 1 – Exterior Excavation Limits

RED HILL AFFX EXCAVATION LIMITS

*Disclaimer - Estimates are crude and may vary slightly
** All measurements taken after concrete/asphalt removal





Phase 1 – Exterior Excavation (Soil/Asphalt/Concrete)

Navy and DOH met on 12/14 and agreed that the Navy will place a temporary cap of asphalt across the site immediately to minimize rain infiltration.

- The temporary cap will provide the team time to methodically review all results (soil, SPLP, and groundwater) and determine the next steps for the site.
- The Navy understands that the temporary asphalt cap may need to be removed after review of the results.

Placement of geotextile fabric, plastic and base layer in advance of asphalt





Phase 2 - Sampling Plan

- PFAS-Specific Site Plan - approved 01 Dec.
 - DU 1- 4 (soil)
 - Groundwater - 9 Monitoring Wells/Red Hill Shaft
 - Method 1633
 - Synthetic Precipitation Leaching Procedure (SPLP) Analysis added 14 December in Discussion with HDOH – Mobility/Immobility Determination
- PFAS-Specific Site Plan – Revision 1 (Submitted 8 Dec 2022/Approved 9 December 2022)
 - DU 5 - 9 (soil)



Validated Soil Sampling Summary



Sample ID	Location	Date Collected	Results Received & Posted
ADIT6-DU01-SON01MI-22DEC	DU-1	2 Dec 22	Yes
ADIT 6-DU01-SON02MI-22DEC	DU-1	7 Dec 22	Yes
ADIT6-DU02-SOFD01MI-22DEC	DU-2	2 Dec 22	Yes
ADIT6-DU02-SOFT01MI-22DEC	DU-2	2 Dec 22	Yes
ADIT6-DU02-SON01MI-22DEC	DU-2	2 Dec 22	Yes
ADIT6-DU02-SON02MI-22DEC	DU-2	7 Dec 22	Yes
ADIT6-DU03-SON02MI-22DEC	DU-3	7 Dec 22	Yes
ADIT6-DU04A-SON01MI-22DEC	DU-4A	2 Dec 22	Yes
ADIT6-DU04B-SON01MI-22DEC	DU-4B	2 Dec 22	Yes
ADIT6-DU05-SON01MI-22DEC	DU-5	15 Dec 22	Yes
ADIT6-DU06-SON01MI-22DEC	DU-6	15 Dec 22	Yes
ADIT6-DU07-SON01MI-22DEC	DU-7	15 Dec 22	Yes
ADIT6-DU08-SON01MI-22DEC	DU-8	15 Dec 22	Yes
ADIT6-IDW-SON01MI-22DEC	IDW	2 Dec 22	Yes*
ADIT6-IDW-SOFD01MI-22DEC	IDW	2 Dec 22	Yes*
ADIT6-IDW-SOFT01MI-22DEC	IDW	2 Dec 22	Yes*
ADIT6-SPLP	DU1-8	2-15 Dec 22	Yes*
ADIT6-AFFF PRODUCT-22DEC	Adit 6 Pipe	08 Dec 22	Yes*

****These results are investigatory and are available for regulatory review on EDMS.***

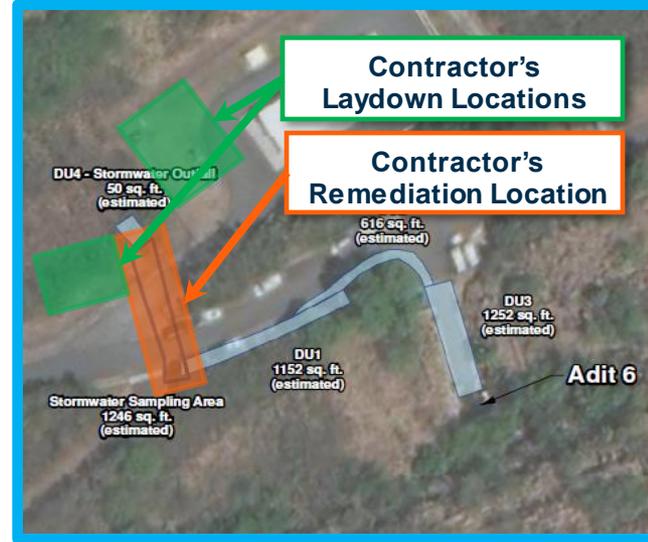


Phase 3 – Culvert Excavation



Objective: Excavate existing storm water drainage pipe and surrounding soil

- Install a new storm water drainage pipe (new pipe not installed – proximity of main waterline feeding fire suppression system concerning; risk deemed high with AFFF system off-line; inlet concreted to immobilize potential contaminants)
 - Backfill the site with clean soil (complete); and,
 - Asphalt pave the road (complete)
-
- Confirmation samples were planned to be collected after excavation from the exposed bottom and four walls represented by five decision units (DU 5-9) IAW the PFAS-Specific Site Plan
 - Soil Sampling: December 15, 2022 (DU 5-8 complete; DU-9 [removal of inlet box deemed to be high risk due to proximity of water main feeding fire suppression system and was concreted in place to immobilize potential contaminants])





Phase 4 – Adit 6 Cleaning

Objective: Clean Adit 6 to remove as much AFFF concentrate as possible and seal the concrete floor with epoxy effectively locking any residual contamination in place. This will prevent residual contamination from mobilizing to subsurface soils and interrupt exposure pathway from source and potential receptors.

- Clean Adit 6 IAW with conditionally approved work plan
- Seal concrete floor with epoxy; and,
- Seal wall floor to ceiling 10 feet on either side of release point with epoxy.
- Cleaning Adit 6 commenced January 3, 2023 and initial cleaning completed January 9, 2023.
- Epoxy sealant applied to floor January 13, 2023. Product information sent to DOH.
- Permeability test on Adit 6 floor conducted January 19, 2023 in coordination with HDOH. Recommended another coating is applied to new concrete patchwork. Additional coating applied to floor January 25, 2023; coating applied to wall January 26, 2023; permeability test on floor conducted January 27, 2023; resumption of access through Adit 6 granted January 30, 2023.



Response Timeline

11/29/22 (begin 24 hour Operations)

- Release Reported
- Site Assessment & SDS
- EOC/ROC Activated
- Mobilize Equipment & Personnel
- Utility Toning
- Removal of Concrete & Asphalt
- Drainage Culvert Secured
- Air Monitoring inside Adit 6

11/30/22

- Controlled Access Point Established (Sign-in)
- Site Control Established (Hot Zone, Contamination Reduction Zone, Support Zone)
- Excavation (Hand & Heavy Equipment) working from least contaminated to most contaminated
- Additional Mobilization of Equipment & Personnel

12/1/22

- Excavation of Drainage Culvert (DU-1) complete
- Excavation of other DUs continues (hand digging, heavy equipment)

12/2/22

- Excavation of DU-2 & DU-4 complete
- Excavation DU-3 (hand digging, heavy equipment)
- Samples taken from DU-1, DU-2, DU-4, drummed impacted soil

12/3/22

- Water Mitigation measures implemented due to forecasted rain (tarps; sandbags; etc.)
- Excavation DU-3 continues
- AECOM collects samples for additional analytes DU-4, drummed impacted soil
- Electrical lines leading to Adit 6 Entrance evaluated by Electrician
- Air Monitoring inside Adit 6
- Additional equipment relocated to support further excavation outside Adit 6

12/4/22

- Water mitigation & inclement weather
- Excavation DU-3 in between rain squalls
- Modified tarp system to cover site engineered
- Culvert drainage system scoped



Response Timeline

12/5/22

- Water mitigation
- Equipment begins to be staged for removal/replacement of drainage culvert
- Excavation DU-3 continues
- Frac Tank delivered for water mitigation moving forward

12/6/22

- Water mitigation
- Excavation DU-3 continues and completed
- Fire System Engineer evaluates unearthed utilities

12/7/22

- Water mitigation
- Samples collected for additional analytes in DU-1, DU-2; collects full-suite of analytes for DU-3
- Excavation measurements collected
- Site clean-up
- Tarp management

12/8/22

- Water mitigation
- Overflow pipe drained inside Adit 6
- Sample collected of AFFF concentrate

12/9/22

- Water mitigation & Tarp management
- Site Control

12/10/22

- Water mitigation & Tarp management
- Site Control

12/11/22

- Water mitigation & Tarp management
- Site Control

12/12/22

- Water mitigation & Tarp management
- Site Control
- Culvert Excavation Commences

12/13/22

- Water mitigation & Tarp management
- Site Control
- Culvert Excavation Continues



Response Timeline

12/14/22

- Water mitigation & Tarp management
- Site Control
- Culvert Excavation Continues
- Meeting with HDOH

12/15/22

- Water mitigation & Tarp management
- Site Control
- Culvert Excavation Complete
- Excavation Confirmation Soil Samples from Culvert Collected
- Backfilling of Culvert Commences

12/16/22

- Water mitigation & Tarp management
- Site Control
- Backfilling of Culvert Complete
- Culvert Shoring/Water Mitigation

12/17/22

- Water mitigation & Tarp management
- Site Control

12/18/22

- Water mitigation & Tarp management
- Site Control

12/19/22

- Water mitigation & Tarp management
- Site Control
- Backfilling Culvert & DU-4

12/20/22

- Water mitigation & Tarp management
- Site Control
- Asphalt Culvert & DU-4

12/21/22

- Water mitigation & Tarp management
- Site Control
- Asphalt Culvert & DU-4

12/22/22

- Placement of geotextile fabric; plastic sheeting to demarcate excavation limit; and base ahead of asphaltting DU 1-3.
- Site Control



Response Timeline

12/23/22

- Asphalt DU 1-3
- Submit Waste Management Plan to HDOH

12/24/22

- Roll-off Bins Relocated to John Rogers Waste Management Site
- Frac Tanks Relocated to Outside Building 313

12/27/22

- Adit 6 Tunnel Decontamination Plan Submitted to HDOH

12/29/22

- HDOH Provides Comments on Adit 6 Tunnel Decontamination Plan

12/30/22

- Response to HDOH Inquiries on Adit 6 Tunnel Decontamination Plan Submitted.
- HDOH John Rogers Site Visit

1/3/23

- Contractor/NAVFAC Equipment Mobilization Adit 6
- Adit 6 Cleaning Test Strip

1/4/23

- Phase 4 Adit 6 Cleaning

1/5/23

- Phase 4 Adit 6 Cleaning

1/6/23

- Phase 4 Adit 6 Cleaning

1/9/23

- Phase 4 Adit 6 Cleaning
- Initial Cleaning Complete

1/10/23

- Phase 4 Adit 6 Cleaning
- Initial Cleaning Complete

1/11/23

- Phase 4 Adit 6 Cleaning
- Initial Cleaning Complete

1/13/23

- Phase 4 Adit 6 Epoxy Sealant Applied
- HDOH Comments on Waste Management Plan Received



Response Timeline

1/17/23

- Sealing of Adit 6 Floor with Epoxy Complete
- Navy meets with HDOH

1/19/23

- Permeability test of Adit 6 floor conducted in collaboration with HDOH.

1/25/23

- Additional coatings of epoxy applied to Adit 6 floor.
- Navy meets with HDOH

1/26/23

- Epoxy coating applied to Adit 6 wall.

1/27/23

- Permeability test of Adit 6 floor conducted in collaboration with HDOH. Permeability test passes.

1/30/23

- Resumption of access through Adit 6 granted.

Navy and DOH are meeting weekly to discuss the path forward. Transitioning the site from emergency response is on-hold pending DOH sample results. Expected in 4-6 months.



Waste Management

- Waste Management Plan - Submitted to HDOH (Dec. 23)
- Decon Plan for Equipment – in development

Media	Count
Soil	107 - 55 gallon drums 5 – 20 cyd roll-off full containers 2 – 20 cyd roll-off containers (both containers ½ full)
Asphalt/Concrete	4 – Dump Trucks
Water	2 - 10K gallon FRAC Tanks (containing >10K gallons) 10 - 55 gallon drums
PPE/Debris/ Absorbent Pads	48 – 55 gallon drums

